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ABSTRACT

In preparation for a conference held in Paris, France, in November 1994, the Organisation for Economic Cooperation and Development launched a 5-year program that involved 20 countries studying the changing role of vocational and technical education and training (VOTEC). A synthesis of national studies on young people's pathways and participation in VOTEC highlights similarities and differences across national system. The following countries are covered by this synthesis: Australia, Austria, Canada (Quebec), Denmark, France, Germany (Western Germany), Italy, Netherlands, Switzerland, and the United Kingdom (England, Wales, and Northern Ireland). In a large majority of countries, a clear hierarchical order exists between general (academic) and vocational education and between different VOTEC pathways. Differences include the structure of first-cycle secondary education, the respective place of pre-academic education and VOTEC in upper-secondary education, the dominant access routes leading to qualified worker/employee jobs and to middle-level positions. These approaches, which vary across countries, include learning on the job, formal apprenticeship, or school-based vocational education. These structural differences give rise to multiple pathways. School-based VOTEC at the secondary level leads either to further postsecondary studies and to a technician diploma or to direct transition into employment. Most countries have started to establish bridges, especially between traditional vocational education at the postcompulsory stage and technical studies at postsecondary level. A common trend across countries is the "spontaneous" increase in the duration of studies. Participation in apprenticeship is declining in comparison with school-based programs. The expansion of technical programs at the postsecondary level has in most countries encouraged participation at this stage. The study set the stage for further discussions of the reasons for changing participation in VOTEC. (KC)

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PATHWAYS AND PARTICIPATION IN VOCATIONAL AND TECHNICAL EDUCATION AND TRAINING

SYNTHESIS REPORT
ISSUES AND QUESTIONS FOR WORKING GROUP I

U.S. DEPARTMENT OF EDUCATION
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(Note by the Secretariat)

1. The attached document presents a synthesis of country studies on "Pathways and participation in vocational and technical education and training" which have been conducted in the framework of the VOTEC activity according to common guidelines layed out in document DEELSA/ED/WD(94)4.

2. The author of the synthesis report is Professor Claude Pair, Institut National Polytechnique de Lorraine, Nancy, France.

3. The report is presented as a discussion paper at the high level conference on **"Vocational Education and Training for the 21st Century - Opening pathways and Strengthening Professionalism"**, at the OECD in Paris, on 28.- 30 November 1994. It will, in particular, serve as a basis for discussion in **Working Group I. Questions for debate** are presented in **Annexe II**.

Summary

1. The attached paper provides a synthesis of national studies on "Pathways and participation in VOTEC". Attention is drawn to the difficulties of cross-national comparison in this area. They relate mainly to the definition and delimitation of VOTEC which vary across the national systems included in this study.

2. Beyond these problems of identification, the text presents the conclusions of the comparative analysis of young people's participation in VOTEC programmes and pathways. Similarities and differences across national systems are highlighted. In a large majority of countries a clear hierarchical order exists between general (academic) and vocational education and between different VOTEC pathways. Differences are observed along several dimensions, concerning e.g. the structure of first cycle secondary education; the respective place of pre-academic education and VOTEC in upper-secondary (post-compulsory) education; the dominant access routes leading to qualified worker/employee jobs and to middle-level positions. These vary across countries. They include "learning on the job", formal apprenticeship, or school-based vocational educaton. These structural differences give rise to multiple pathways. School-based VOTEC at the secondary level leads either to further post-secondary studies and to a technician diploma or to direct transition into employment. Most countries have started to establish bridges, especially between traditional vocational education at the post-compulsory stage and technical studies at post-secondary level.

3. A quantitative evaluation of the importance of vocational and technical education and training allows to illustrate young people's choices. A common trend across countries is the "spontaneous" increase in the duration of studies. Participation in apprenticeship is declining in comparison with school-based programmes at the post-compulsory stage and participation in technical education increases relative to that in traditional vocational education in countries where a distinction is made between the two. The expansion of technical programmes at the post-secondary level has in most countries encouraged participation at this stage.

4. These observations allow, finally, to examine a number of hypotheses explain the reasons for changing participation in VOTEC, as presented in document DEELSA/ED/WD(94)4 (reproduced in Annex I of the attached text) and to recall a number of major challenges facing VOTEC. Annex II presents "Questions for debate" which will be discussed in Working Group I during the conference on "Vocational education and training for the 21st century - opening pathways and strengthening professionalism".

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Introduction

1. This synthesis report has been compiled on the basis of national reports prepared in accordance with the guidelines for country studies on "Changing pathways and participation in VOTEC (cf DEELSA/ED/WD(94)4). The following countries are covered by this synthesis: Australia, Austria, Canada (Quebec), Denmark, France, Germany (western Germany), Italy, Netherlands, Switzerland and the United Kingdom (England, Wales and Northern Ireland).

Scope of the study

2. The abbreviation VOTEC is derived from two adjectives, vocational and technical, which designate the two categories of employment concerned. The term "vocational" refers to the functions of skilled operatives, both blue-collar and white-collar workers. The so-called "professional" training undertaken by persons performing planning and senior management functions or members of the professions is not covered by the study. However, the study does cover the "technical" functions and related types of training given to technicians and middle-management and supervisory grades.

3. The title of the VOTEC Project also contains the words education and training. The term "education" is used to designate primarily the instruction given in schools controlled by the Ministry of Education, whereas "training" has less of a "school" connotation and refers principally to the world of work, enterprises, services and government administrations. However, these are two sides of the same coin rather than separate entities, and the two are increasingly linked in what we shall be calling here vocational and technical education and training.

4. The term "training" covers both "initial training" at the start of a person's life prior to entry to the labour market, and "continuing training" throughout the person's working life. The current study focuses on youngsters rather than adults, and therefore on initial training. But, here again, there is no clear division and we are likely to find ourselves discussing the role of apprenticeship or types of training targeted to the unemployed. What is more, in some countries like the United Kingdom, Australia and Canada, initial training and continuing training overlap and are provided by the same institutions, making it sometimes difficult to separate them. Aside from organisational considerations, there is in these cases a concept of training as a continuum.

5. From the point of view of a student's passage through the system, the type of training under consideration here occurs nowadays in every country after the middle or lower-secondary school, i.e. in most cases after compulsory education. The different types of vocational training are at upper-secondary level. Technical training may also begin at this level but continue beyond this into post-secondary level on what many countries call higher or tertiary education, the latter including not only universities but also other institutions or colleges.

6. However, some country reports do not fully cover that part of VOTEC which is provided at the higher education level. This is clearly one indication

of the difficulty of defining the upper limit of VOTEC; the term "technical" is understood in different ways in different countries: some use other adjectives, such as "para-professional" in Australia, while others use the term in a completely different way, for example to designate training for the manufacturing sector as distinct from the administrative or health sectors.

7. In fact, the functions midway between what were once the clearly defined categories of operatives and supervisory grades differ and are still somewhat ill-defined. These intermediate positions may be filled either by highly skilled workers or by middle supervisory grades -- in which case the dividing line between them and skilled workers is difficult to define -- as with those in planning and management posts, where the difference between them and engineers is not always clear. A nurse or a physiotherapist can either occupy a middle-ranking position in a hospital or work as a self-employed professional, although the training is the same in either case. The Australian report distinguishes between eight levels of skill of which four seemed to fall within this intermediate category.

8. Access to these positions -- depending on the case, the sector of activity and the country -- can be mainly through internal promotion or mainly through recruitment. The corresponding types of training, therefore, differ substantially, but they are neither the traditional forms of training for skilled workers -- that is, on-the-job training, apprenticeship or in a regular vocational school -- nor the traditional forms of training for senior management consisting of academic secondary education and higher education at a university. This is a recent situation dating back only ten or twenty years, which has not yet assumed its final form but which is certainly a strong indication of future trends.

9. The initial aim of the study was to explain the varying importance in quantitative terms of the different types of initial vocational and technical training in the various countries -- in other words, the "participation rates" -- and the trends over time: are the various policies regarding the structure of education systems encouraging youngsters to participate in VOTEC, in what way are these policies influencing their decisions, in conjunction with other factors and, more particularly, the signals coming from the labour market?

10. The first stage therefore consists in identifying, in the case of each country, the programmes making up VOTEC and the pathways that students take by moving on from one programme to the next, and in providing statistical information on enrolments and flows. The country reports are concerned primarily with this first stage. Even if the statistical information they contain is not all as detailed as one would wish, they represent a first step in the direction of a common language which enables us to describe and analyse the existing systems and the participation of students in the various possible pathways. In addition, some of the reports also provide some preliminary explanatory details and, by comparing these, it is possible to arrive at a number of conclusions and formulate certain hypotheses.

Programmes and pathways

11. In all countries, secondary education used to be confined to a general academic stream designed to educate society's future élites. Nowadays, while lower-secondary education has become available to all and has been made compulsory, this traditional education has acquired a successor at upper-secondary level in the shape of a stream which, following on from the final certificate (abitur, A level, baccalauréat, matura, etc.), takes the vast majority of its students on to higher education. During the period since the Second World War, what have emerged alongside this stream have been types of training that come under the heading of VOTEC. Nowadays, these begin at upper-secondary level and, although a move from them into higher education has subsequently become possible, it is less natural and more difficult than in the case of the academic stream. In every country there is a difference in status between the academic and VOTEC streams, and also between the various types of VOTEC. This hierarchy is evidenced by the educational standard and the socio-cultural background of the student intake.

12. Apart from these basic similarities between the systems in the various countries, there are differences. The first of these precedes VOTEC and has to do with the structure of middle or lower-secondary education: while this is single-stream in most countries (with the exception of special education, which accounts for about 3 or 4 per cent of pupils), it is divided into separate programmes in Austria (where the separation was relaxed during the 1980s), Germany, the Netherlands (where the arrangement was revised in 1993) and Switzerland, with one of the programmes being the start of the academic stream and the remainder leading on primarily to vocational and technical education and training; France's position is midway between these two, having had for the last two years and for a small proportion of its pupils a programme leading primarily to vocational education: this programme was phased in with effect from 1984 in order to delay entry into vocational education which was occurring, in the case of some pupils, prior to the end of lower-secondary education.

13. Another difference is the relative importance in numerical terms of VOTEC and the academic stream in upper-secondary education. On this basis, countries can be divided into two distinct groups: those of the British Commonwealth -- Australia, Canada and the United Kingdom -- where the academic stream is by far the largest, and those of continental Europe where VOTEC predominates, with a figure of about 80 per cent in Austria and Switzerland, about 70 per cent in Germany and the Netherlands and about 60 per cent in Denmark, France and Italy, with these figures varying slightly depending on whether one considers stocks or flows.

14. This is partly related to the different ways in which youngsters gain access to posts as skilled workers and, more generally, to positions within a firm's hierarchy: that is to say, some time after being hired and once the person has proved his ability; following a prescribed and formalised period of engagement, spelled out in a specific work contract; or immediately on hiring on the basis of the person's prior qualifications. In the case of vocational education and training, these three methods of access are enshrined in three

main traditions: on-the-job training, formal apprenticeship and school-based education and training. Although these practices may continue to co-exist in the various countries, they do so to differing degrees: in most cases one of them predominates and influences training and education policy as well as the definition of contents and the credentialling of attainment.

15. In countries like the United Kingdom and Australia, where on-the-job training was predominant up until a few years ago without however access to higher education being very widespread, governments became alarmed at the risks of such a situation, given the rapid changes that were taking place in skill requirements and in the labour market. They introduced various forms of training, combining initial training for youngsters and continuing training for adults, and they tried to manage all this by means of a general and modular system of credentialling skills. Reforms are therefore under way, for the most part since the early 1990s. In the United Kingdom however, alongside the system for credentialling skills acquired for the most part at the workplace (NVQs -- National Vocational Qualifications), another system is currently being put in place which applies to school-based training (GNVQs -- General National Vocational Qualifications).

16. In the countries of continental Europe, apprenticeship and school-based training co-exist in differing proportions. In Switzerland, apprenticeship has by far the larger share: it is regulated by an Act of 1930, the latest amendment of which was in 1978. The same is true of Germany (1969 Act amended in 1981), although a substantial proportion of youngsters undertake full-time secondary education either within the VOTEC system (in various types of vocational schools) or outside of this (in a gymnasium) before entering the dual system. In Austria too, the dual system of apprenticeship is also a long established tradition, but over the years school-based training has overtaken it in terms of the numbers enrolled. In the Netherlands, training is mainly school-based, but the numbers in apprenticeship are substantial.

17. In France, school-based training predominates and the apprenticeship system operates mainly in the craft trades. In Italy, training is primarily school-based and apprenticeship is the path followed by those who have left school early. Denmark is a special case since, rather than there being co-existence or even competition between the two systems, the country has a single system combining, in a balanced manner, full-time school-based training and apprenticeship; this system was revised in 1989 in order to unify it still further. In the case of Quebec, where access to higher education is very widespread, it has a system of school-based training which, for the most part, takes place at the post-secondary college level.

18. The concepts of programmes and pathways adopted by OECD as the basis for the study apply in different ways in the two situations referred to in the preceding paragraphs. In the case of a modular system, where enterprises and various types of training institution are expected to play a role and to compete with one another on a market for initial and continuing training that is governed primarily by the recognition of skills, the number of different programmes increases constantly and it is not easy to classify them other than in terms of levels. The United Kingdom, for example, defines five levels (foundation, craft, technician, higher technician, professional) for the National Vocational Qualifications (NVQs) introduced in 1988 and prepared

mainly at the workplace, and three levels for the moment for the General National Vocational Qualifications (GNVQs) introduced in 1992 and phased in subsequently: these three levels correspond to the first three NVQ levels, but these GNVQs are for the most part obtained at the end of secondary education. In Australia, where the country's federal structure complicates the situation still further, there are eight levels.

19. Likewise, the concept of pathways is not an easy one to define, other than to note their wide variety or to confine oneself to generalities: in the United Kingdom "there are three main post-16 pathways, General Certificate of Education, GNVQs, NVQs", but there are many crossover points and an increasing number of pathways that combine general and vocational modules.

20. It should be added that, in these two countries, reforms are under way and the situation still appears to be in a state of flux. VOTEC courses at the secondary level have two outlets: employment or further study at a higher level, particularly for the training of technicians. The countries of continental Europe, other than the Netherlands, differentiate between these two destinations by dividing VOTEC programmes into two categories: one that could be termed "vocational", targeted primarily to employment at the skilled worker level, and the other that could be described as "technological", still with the double destination either of employment at the technician level, or increasingly of further study at the post-secondary level.

21. Austria, for example, has both technical colleges as well as full-time vocational colleges; France has a vocational stream and a technological stream; Italy has both vocational schools and technnical schools; Denmark has, on the one hand, alternating classroom/workplace training, following which most of the students enter employment, and, on the other, technical and business courses, in which students are enrolled after one year's vocational training and which also lead on to higher education; in Germany, some schools prepare students for the *Fachhochschulreife* which allows access to the higher technical schools (*Fachhochschulen*); Switzerland, where there was hitherto little differentiation between levels of apprenticeship, has just introduced the vocational *maturité* in order to introduce a larger element of general education into apprenticeship training to pave the way for entry to higher vocational schools.

22. In Quebec, VOTEC at secondary level is made up solely of vocational programmes leading, for the most part, directly to employment. Some countries have two levels of vocational programmes. This is the case in France where the first level, credentialled by a diploma, leads either to a skilled job or to entry to the second level, which was introduced in 1986 and which leads to a vocational *baccalauréat* and then, usually, to employment. In the Netherlands, the long three or four-year cycle is undertaken either directly after lower-secondary school or following a short two-year cycle which was introduced in 1979 to facilitate access to vocational training for youngsters who are having difficulties with their regular schooling.

23. Technological programmes are at the post-secondary level and their intake, therefore, comes from two sources: general secondary streams and VOTEC. In Quebec, virtually all the students in college technical streams come from the general stream, not only because the general stream is the predominant

one at secondary level but also because students in the vocational stream tend not to carry their studies further. In Austria, the post-secondary colleges award the same type of qualification as the technical colleges and therefore tend to get students coming from the general stream, although students from the technical schools also enrol in order to learn additional skills while, on the other hand, going in increasing number to the universities; it is planned to start setting up nigher technical schools (*Fachhochschulen*) in 1994.

24. In the Netherlands, there is a very clearly defined technical stream at the higher education level which gets its intake from the general streams and more particularly from the one which is not considered a pre-university stream, from the vocational secondary schools for about 25 per cent of its intake (or 35 per cent counting only those entering straight from school) and, to a far lesser extent, from apprenticeship. In France, short-cycle technological higher education takes in a roughly equal proportion of students with general and technological *baccalauréats*. In Germany, students entering higher technical schools come in the main from full-time secondary technical schools. In Switzerland, some of its higher school are reserved for students who have received their training through an apprenticeship, while it is intended that the *Fachhochschulen* will take in holders of the vocational *maturité*.

25. A distinction can thus be drawn between vocational pathways, sometimes with two levels (France and the Netherlands), and technological pathways, either with a programme at secondary level possibly followed by a programme at a higher level, or with general secondary education followed by a higher technical programme. However, a pathway can start out with a vocational programme and be followed by one or two technological programmes; this is the case in France, where the first-level vocational programme allows access to a programme leading to a technological *baccalauréat* and subsequently to a higher technician's course.

26. More generally, an effort is being made in most countries to establish crossover points between the different types of training and, in particular, between vocational and technological training. This is already the case in Germany, where the pathways are not only many and varied but also flexible: in particular, entry into the dual system can occur at various levels of secondary education and even on occasions after starting higher education. Italy would seem to be the only exception to this rule, with streams that are very watertight and with the systems of apprenticeship or training for which the regions are responsible taking in youngsters who have dropped out from the State vocational and technical schools.

27. The systems in the various countries can be seen as developing in directions that lie somewhere between two national poles: at one extreme (Figure 1) there would be several hierarchical levels of vocational and technical training with each getting its intake from general education; at the other extreme (Figure 2) there would be a vocational and technical stream to which entry would be possible from various levels of general education and from which exit would be possible at various levels, in the case of both initial and continuing training. Neither of these two models actually exists, but the trend reflects a move away from the first and towards the second, and the different countries are more or less further advanced along this road.

Figure 1

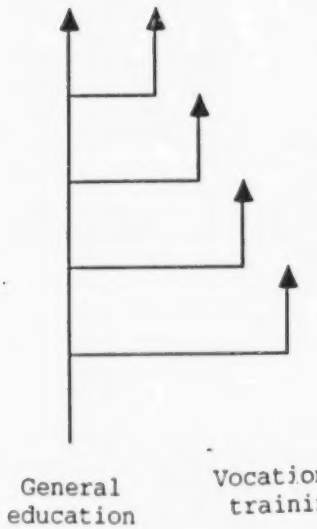
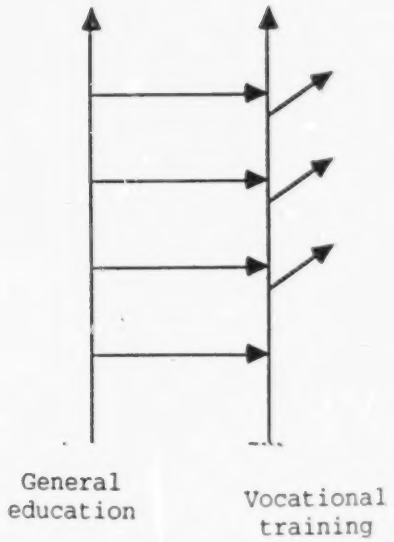


Figure 2



Participation: quantitative trends

28. It is difficult to be very precise in this area since the type of information supplied in the country reports and the periods covered are not always compatible. In order to make comparisons we have decided to take a period of about ten years starting in the early 1980s; during this period the structure of education systems remained relatively stable. What becomes apparent are a number of instances of convergence as well as several significant differences.

29. The most striking common feature of all is the overall improvement in the level of training through an increase in the duration of schooling, not as the result of any decision taken during this period to extend this, but rather as the outcome of a spontaneous trend. For example, in Australia the proportion of a cohort completing secondary education rose from 45 per cent in 1985 to 72 per cent in 1992, and in France from 34 per cent in 1981 to 63 per cent in 1993. In Denmark, the enrolment rate for upper-secondary education rose from 85 to 93 per cent between 1980 and 1990. In Germany, the proportion of students leaving secondary school with a secondary school diploma (*Hochschulreife*) rose from 21 to 26 per cent between 1984 and 1991. The participation rate for 17-year olds in Switzerland increased from 80 per cent in 1980 to 87 per cent in 1990; for 18-year olds, in the case of the Netherlands it rose from 55 per cent in 1979 to 77 per cent in 1990 (full-time plus part-time students), in the United Kingdom from 32 per cent in 1980 to 45 per cent in 1992 (and from 15 to 33 per cent in the case of full-time students). In Italy, the numbers enrolled in upper-secondary education rose by 400 000 between 1982 and 1991.

30. The numbers enrolled in higher education in Australia increased by almost half between 1981 and 1990, and in France by two-thirds between 1980 and 1992. In Denmark, the proportion of a cohort entering higher education rose from 31 to 38 per cent between 1980 and 1990. In Germany, the proportion of secondary school graduates going on to higher education increased from 41 to 47 per cent between 1984 and 1990. In the Netherlands, the proportion of those leaving the education system at the higher education level (general and technical) rose from 21 per cent in 1978 to 29 per cent in 1990. It should also be said that, in countries with different streams at lower secondary level, the tendency is for enrolment to increase in those streams leading to the longer cycles of education.

31. At the upper-secondary level, the way this growth is split between general streams and VOTEC differs and, in this respect, the countries fall into two groups. VOTEC's share is increasing in Denmark and the Netherlands and, to a lesser extent, in the United Kingdom and Austria. In Denmark, this expansion in VOTEC is coupled with a fall in the proportion of a cohort entering general education (from 36 per cent in 1980 to 33 per cent in 1990). In the Netherlands, all of the growth is in VOTEC, with the proportion of a cohort in general education remaining virtually stable. In the case of the United Kingdom, the percentage increase in VOTEC enrolment is substantial, but the numbers are small. In Austria, the increase has been slight.

32. In the other countries, this growth has been more to the benefit of general education. In the case of Australia, France and Italy, it has been entirely in general education, with the numbers in VOTEC remaining stable or falling slightly. In Germany, the proportion of a cohort enrolling in general education is on the increase; by contrast, the proportion entering the dual system is static at the post-lower-secondary stage, and declining both at the post-gymnasium stage -- to the benefit of further study at the higher education level -- and after other forms of schooling -- to the benefit of direct entry into the labour market; all this is happening against a background of a sharp demographic decline. In Switzerland, general education is expanding and VOTEC declining, but the scale of these changes is slight. In Quebec, VOTEC is in the process of disappearing at the secondary level, with enrolment down to 7 000 full-time equivalents in 1992 compared with 32 000 in 1985; this downturn coincides with the introduction of a reform in 1987 requiring a fuller basic education before entering VOTEC.

33. With regard to VOTEC programmes at secondary level, there are two trends that are worth noting: firstly, wherever they are separate, technological programmes are gaining ground at the expense of vocational programmes; secondly, although the proportion of apprenticeships may fluctuate, sometimes as the result of policy initiatives, they are tending to decline in relation to school-based training.

34. In Austria, for example, between 1980 and 1990 the proportion of secondary students enrolled in technical colleges rose from 18 to 26 per cent, while that for vocational colleges fell from 18 to 17 per cent, and apprenticeships from 46 to 39 per cent. In France, between 1981 and 1992 enrolment the technological stream increased from 257 000 to 374 000, while that for vocational lycées declined from 844 000 to 735 000, and apprenticeships from 250 000 to 218 000, even though vocational lycée courses and apprenticeships were made longer.

35. In Denmark, the increase in the VOTEC inflow between 1980 and 1990 occurred for the most part in technological programmes. In Italy, although the changes in enrolment rates were fairly slight, the inflow into technical schools remained stable between 1982 and 1991, whereas it declined in the case of vocational schools. In the Netherlands, the numbers in vocational secondary education rose more rapidly than those in apprenticeships. In Switzerland, the slight fall in VOTEC's share was confined solely to apprenticeships whereas the numbers enrolled in full-time vocational schools, although still only a very small proportion of the total, have tended to increase. In Germany, the situation is more difficult to assess, since entry to the dual system may be preceded by a period of full-time vocational training.

36. However, the development of VOTEC cannot be judged simply on the basis of the secondary level. Those of the reports that cover the post-secondary level show that the growth has been more marked in this sector. In France, the numbers enrolled in advanced technicians' programmes increased more than two and a half times between 1980 and 1992, far more than the expansion in higher education as a whole, and these students now account for almost 20 per cent of total VOTEC enrolment. In the Netherlands, the inflow into higher technical

education rose by two-thirds between 1980 and 1990. In Australia, although total VOTEC enrolment remained static, the numbers in advanced technicians' courses grew by 11 per cent in three years. In Germany, the number of students in higher technical schools rose by over 4 per cent per year between 1984 and 1990, this however being partly due to the increase in the average duration of studies. In Quebec, in terms of initial training, VOTEC is now mainly confined to the post-secondary level; however, although enrolment rose slightly during the 1980s, its share in relation to college general education, which accounted for half the total in 1980, declined by 3 per cent.

37. The development of post-secondary technological education makes it easier for VOTEC students at secondary level to continue their studies, something which in most countries was virtually impossible not so long ago. In France, 70 per cent of those completing a secondary technological course in 1992 went on to higher education, whereas the figure was only 44 per cent in 1980; and a substantial proportion -- about 20 per cent -- of holders of a vocational *baccalauréat* do likewise. In the Netherlands, the proportion of students in higher technical education coming from vocational schools increased two and a half times between 1980 and 1990. In Denmark, the expansion of higher education is entirely due to ex-VOTEC students. In Austria, 40 per cent of technical college graduates now go on to university. In the United Kingdom, 36 per cent of university entrants do not have the traditional A-level General Certificate of Education, and most of them come from vocational education. In Germany, as was said earlier, the intake of the higher technical schools comes mainly from full-time secondary technical education; by contrast, the dual system provides little access to higher education, its chief outlet being employment, and to an increasing degree in percentage terms in recent years. The development of VOTEC and, in particular, of technological programmes is encouraging an increase in enrolment levels among the less well-to-do social classes.

38. A number of country reports provide separate figures for males and females. The pattern is in all cases similar. Where female enrolment was lagging behind, the gap has been closed except in Switzerland, where it has however lessened. Females have a higher level of attainment than males and outnumber them in the academically more prestigious programmes, but are slightly under-represented in VOTEC, except in Quebec; however, in apprenticeship they are greatly outnumbered by males. The proportion of females in VOTEC is increasing, as it is in employment, with the development of the services sector. The increase is often most marked in training at the higher levels: a striking example is the case of students in the Netherlands who go on from vocational to higher technical education, where the proportion of women increased more than fivefold between 1980 and 1990.

39. Nonetheless, although there is a tendency towards greater similarity between the behaviour of male and female students and in their enrolment levels for the broader categories of training, this is true only for the overall trend since the specialities they choose are still very different: there are significant numbers of females only in a few occupational sectors, i.e. administration, health, social and personal services.

Hypotheses regarding the development of participation in VOTEC

40. The overall conclusion that can be drawn from the foregoing analysis is that VOTEC is being swept along by the general expansion of education. This can be demonstrated more clearly by comparing the situations in the different countries in order to see in what cases participation in VOTEC has increased during the period under consideration.

41. Overall participation in VOTEC at upper-secondary level is increasing significantly in two countries. In Denmark, where vocational training allows access after one year to technological programmes from which the outflow into higher education has doubled, the increase in participation has been mainly in these technological programmes. In the Netherlands there is no technological training at secondary level, but the growth in VOTEC, which has been particularly marked in the case of school-based training, has coincided with the increasing inflow into higher technological education; in addition, during this same period a short vocational cycle was introduced in order that underachievers in the academic stream could be given a second chance and subsequently transfer to a four-year vocational programme, without this involving a lowering of the standard of this programme.

42. In Austria, where VOTEC's share is increasing slightly, the beneficiaries of this are the technical colleges, whereas the numbers enrolled in vocational colleges and, in particular, in apprenticeships are declining. In France, where VOTEC is seeing its share in secondary education diminish while its overall numbers remain static, it is the technological stream that is expanding at the expense of vocational pathways, where the only positive feature is the rapid growth of those leading to the vocational *baccalauréat*, which is of a higher standard and holds out the hope, usually unfulfilled, of being able to go on to a more advanced level. The trends are less pronounced both in Italy, where the technical schools, which allow limited access to higher education, are nonetheless withstanding the erosion better than the vocational schools, and in Switzerland where there has been somewhat of a decline in apprenticeships and where the vocational *maturité* is only just being introduced. In Quebec, where the vocational programmes at secondary level provide little opportunity for continuing one's studies at a higher level, these programmes are gradually disappearing.

43. The conclusion is clearly that, at the secondary level, the expansion in VOTEC is taking the form of pathways allowing access to higher education, particularly of a technological kind, for a substantial proportion of the students. The report for Italy, moreover, makes the point that it is at the higher education level that the relationship between general and vocational education in terms of prestige is reversed; the same is true in France. VOTEC programmes at post-secondary level, wherever the reports mention this aspect, are expanding, with one exception however: Quebec, where post-secondary enrolment is very high, where these programmes now constitute virtually the first level of VOTEC and where they are suffering competition in the colleges from pre-university programmes. This example, therefore, leads one to suspect that the above conclusion may be no more than provisional.

44. This conclusion can be compared with the hypotheses set out in the document DEELSA/ED/WD(94)4[1] which are examined and discussed more particularly in the reports for Australia and Austria; these hypotheses are listed in Annex 1 hereto. It clearly bears out Hypothesis 4: "long pathways": participation in VOTEC is higher, the greater the possibility given to young people to increase their level of qualification both at the secondary level and in post-secondary vocational and academic education".

45. One way of ensuring an inflow of students into these pathways that allow access to higher education, and which we have been describing as "technological pathways", is to allow entry to them at various levels for students from general education and vocational training. The possibility of so doing is considered in the four countries referred to above as having improved participation in VOTEC, or at least in the technological pathways, and perhaps to a lesser extent in the other countries. This confirms Hypothesis 3 ("flexible pathways") with regard to transfer from general education to VOTEC and from a VOTEC programme to another at a higher level; on the other hand, transfer from VOTEC to general education is scarcely mentioned in the reports, no doubt because this is more difficult to achieve.

46. As stated earlier (see Figure 2), what are beginning to appear are streams where it is possible to enter at various levels from general education and to exit at various levels, at the stage of either initial or continuing training (see Hypothesis 5: "segmentation of pathways"). As the report for Italy says, regretting that such flexibility does not exist in their country, this can prevent students from having to decide beforehand on "the length of the pathway to follow" on the basis of their academic performance and their family's financial resources. And it is not only at the top end that it can be useful to extend pathways, as is demonstrated by the Netherlands which has set up a system whereby young underachievers can transfer to a vocational pathway without this causing a lowering of the standard of vocational training.

47. Hypothesis 2 ("delayed divergence of pathways") takes a different line -- one which is, in fact, not borne out by what is happening. The three countries with the highest figures for VOTEC's share at secondary level -- Austria, Switzerland and the Netherlands -- are those where pathways diverge as early as the intermediate level. The decline of VOTEC at the secondary level in Quebec coincides with the raising of the age and standard required for entry, and has to be seen in the context of an education system where, for most students, pathways do not diverge until after the secondary level. In France, initial entry to vocational education has been pushed back two years and this has led to a drop in numbers for the corresponding programmes. The report for Australia highlights a similar situation.

48. Hypothesis 9 ("work-based pathways") would seem to be open to question in the light of the reported findings. Admittedly, those countries with the highest proportion of VOTEC all have a strong tradition of apprenticeship. But, even in these countries, the proportion of apprenticeships seems everywhere to be declining rather than increasing, perhaps because apprenticeship is not adaptable, or has not adapted, to this raising of levels.

49. The reports do not really permit the testing of Hypotheses 1 ("diversification of programmes") and 6 ("broad occupational fields") which seem to be contradictory if Hypothesis 1 is understood as leading to a pronounced specialisation of programmes and itineraries; it is however noticeable that in most countries the tendency is more towards a grouping together of programmes leading to related occupations and that Hypothesis 6 would appear to be more consistent with the upward extension of pathways and with multi-level streams. The report for Austria suggests that a choice needs to be made between the different meanings of Hypothesis 1: it can also, in effect, be understood as meaning the diversification of training methods and institutions, as is happening in Australia and the United Kingdom.

50. There is little point in prolonging training itineraries and setting up multi-level streams if there is no formal and coherent system for recognising qualifications, as is suggested in Hypotheses 7 and 8. The reports show that most countries have such a system while those that do not are in the process of setting one up.

51. Hypothesis 10 on the value of qualifications is also related to this. It refers to the labour market, the influence of which is touched upon in a number of country reports: that for France indicates that the signals coming from the labour market are encouraging students to take their studies further; that for the Netherlands mentions the favourable outlook during the 1980s for graduates from secondary and higher VOTEC streams, which are two expanding sectors, compared with graduates from general education; that for Austria points to conditions of hiring as one of the possible reasons for the decline in apprenticeship; that for Quebec notes that the tendency for graduates from college technical programmes to continue their studies fluctuates in parallel with the unemployment rate for these graduates; that for Germany shows that access to employment following a VOTEC training improved between 1984 and 1990, which reduced the stay-on rate in some cases. It is clear that participation in VOTEC does not depend solely, and perhaps not even primarily, on the structure of the education system.

Conclusions

52. This study of developments as regards participation in the various programmes and pathways enables us to note certain similarities and rule out certain hypotheses but not to establish any causal relationships. Firstly because, in a certain number of reports, the figures appear to be somewhat unreliable. They are also highly aggregated, with few breakdowns by occupational sector, sex and social background. It would unquestionably be useful to compile statistical studies on trends over time, with these studies being co-ordinated on an international level in order to help to improve the comparability of data.

53. However, the structure of training is not the only explanation and probably not even the prime factor. More basically, the situation is the outcome of the interplay of the different actors listed in the report for France:

-- The employers who in most countries have called for, not only in so many words but more often also through their requirements for hiring, a higher level of training so as to be able to respond to changes in the economy and in employment, but who sometimes regret not being able nowadays to find "professionals" for the skilled jobs;

-- The unions which have to cope with the competition on the labour market between the older and younger generations;

-- The youngsters who expect training to protect them from unemployment and to guarantee a satisfactory start to their working career, coupled with upward social mobility which nowadays would appear to be less easy to achieve; in the OECD Member countries, these youngsters' ambitions are less constrained than in the past by their family's financial resources;

-- The authorities whose task it is to define education and training policy: they are endeavouring to reconcile economic needs and social needs, but sometimes see VOTEC primarily as a means of curbing the growing pressure on the universities;

-- The training institutions and the teachers who have a real influence on the status accorded the various types of training.

54. It is the interaction between all of these actors that has led to the situation described above: they have all agreed on the need to push for a general raising of the standard of training, which is leading inevitably in the case of VOTEC to the conclusion set out in paragraph 28. It remains to be seen under what conditions, as regards not only the organisation of VOTEC but also the labour market, this approach will, over the long term, enable both the needs of the economy and individuals' aspirations to be satisfied, as the report for Australia points out. The fact is that expanding participation in VOTEC is not an end in itself.

55. Lastly, the real deciding factor in all this is increasingly the youngsters themselves, and this is something which ought not to be deplored despite the difficulties it may create for the other parties concerned. The democratisation of education, which is continuing in all countries despite in many cases a certain slackening of pace as a result of economic difficulties, is giving rise to more information, freer choice and resistance to the socio-cultural determinisms that predestine some for management positions by virtue of their academic training and others for posts as operatives by virtue of their vocational training.

56. Despite what is often said, youngsters' behaviour is more rational than it might seem, even though it is based more on the present-day situation than on the future, which in any case is difficult to predict with any certainty. Although youngsters may not always go along with the predominant line of thinking which is in favour of developing vocational training, this is probably because this approach is in contradiction with the requirements of employers when hiring staff. This is a point on which further research would be useful.

57. The challenge facing VOTEC is twofold(1):

-- Reconciling education and training, that is to say individual, social and economic aims;

-- Ensuring, within a democratic society, a balanced distribution of persons between socially unequal functions.

58. It should be added that these challenges have to be tackled within a context that is one of change and uncertainty, which calls for adaptability not only on the part of the persons trained and throughout the course of their career but also on the part of the training system itself. Unfortunately, the system's historical roots and the wide variety of actors concerned make any change long and difficult. Tackling the first of these challenges means acknowledging the fact that acquiring a skill forms part of the process of building a person's identity and that economic requirements need to be taken into account throughout the entire process of education but that, on the other hand, these requirements cannot be pursued in isolation without any concern to turn out complete and fulfilled persons. All this argues in favour of not separating general education and vocational training into watertight compartments and, as far as possible, of pursuing general education during vocational training.

59. Another way of responding to the need for adaptability is continuing training throughout a person's career. Indeed, one of the aims of initial education is to encourage a positive attitude in this respect by inculcating the "learning habit". It is therefore a matter of thinking in terms of lifelong education, of a continuum between initial training and continuing training.

60. As regards the second challenge, part of the answer with respect to training structures is to organise multi-level streams (Figure 2), culminating in training for "professionals", but irrigating the entire economy, including at the level of workers who are currently classified as "operatives"(2).

61. The revision of training structures, therefore, can only be meaningful in conjunction with changes in the organisation of work within enterprises, and in the quality and the number of jobs on offer.

Endnotes

1. "The Changing Role of Vocational and Technical Education and Training - Context, Actors Challenges", DEELSA/ED/WD(94)34

2. *The Difficult Rediscovery of "Professionality"*, DEELSA/ED/WD(94)17, paper presented at the fourth VOTEC seminar in April 1994 in Marseille on "Apprenticeship, 'Alternance' and Dual System: Dead-Ends or Highways to the Future?"

ANNEX 1

WORKING HYPOTHESES

FACTORS EXPLAINING PARTICIPATION IN VOTEC

Hypothesis 1 "new pathways" : participation in VOTEC is enhanced by increasing the number and variety of existing programmes and pathways (diversification of VOTEC programmes).

Hypothesis 2 "delayed divergence of pathways" : participation in VOTEC is higher the later pathways diverge (delayed provision/starting point of VOTEC programmes).

Hypothesis 3 "flexible pathways" : participation in VOTEC is higher, the greater the opportunities for transfer :

- from VOTEC to general education
- from general education to VOTEC
- among programmes and pathways within VOTEC.

Hypothesis 4 "long pathways" : participation in VOTEC is higher, the greater the possibility given to young people to increase their level of qualification both at the secondary level and in post-secondary vocational and academic education.

Hypothesis 5 "segmentation of pathways within VOTEC": participation in VOTEC is higher when different programmes and pathways provide exit points at different levels of recognised qualification.

Hypothesis 6 "preparation for broad occupational fields" : participation in VOTEC is higher, the wider the range of occupations to which any vocational programme may lead.

Hypothesis 7 "formally recognised qualifications" : participation in VOTEC is higher when students/apprentices have access to a widely recognised certification.

Hypothesis 8 "one coherent national system of qualifications" : participation in VOTEC increases if all general and vocational certificates are part of one and the same national system of certification.

Hypothesis 9 "work-based pathways" : participation in VOTEC is higher if pathways lead into internal labour markets.

Hypothesis 10 "value of qualification" : participation in VOTEC depends on the value of obtained qualifications in the labour market.

ANNEX II

Improving the attractiveness of VOTEC and enhancing parity of esteem between general and vocational education

QUESTIONS FOR DEBATE

Numbers in brackets refer to relevant paragraphs in the preceding issues paper

1. Main questions and issues

The formulation of Theme I (Working Group I) seems to postulate "a priori" that the attractivity of VOTEC should be improved. This assertion deserves to be debated:

1.1 Why?

In order to respond to
- the needs of individuals?
- economic and social needs?

(57, 61)

1.2 What would be alternative choices?

- early entry into employment (the labour market) without formalised vocational education and training? (14)
- prolongued general education? (and) (29, 31)
- more developed further/ continuing/ adult education and training? (4, 58)

1.3 Which groups of young people should be attracted to VOTEC?

- the most successful students? (the top x% ?)
- those with average success? (the median x% ?)
- the least successful students? (the bottom x% ?)

Is the idea of "attractiveness of VOTEC connected with a social bias ? (11, 37, 47)

1.4 What are the limits of VOTEC - which jobs are we talking about?

- executive jobs only?
- "middle level" jobs: technicians, middle management... (is there a need to define these jobs more precisely?)
- "professional" jobs in the Anglo-saxon understanding (emplois de conception et d'encadrement) ?

(2, 5)

2. Factors of attractiveness or un-attractiveness of VOTEC

2.1 Conditions of transition from school to work and employment conditions after general and vocational (initial) education respectively: employer strategies/habits of recruitment, social-economic status and career perspectives ? (50, 53, 55)

2.2 The comparative cost of general and vocational for young people and their families ?

2.3 Structure and organisation of pathways: conditions of access to different pathways, their duration and flexibility, cross-roads between different VOTEC pathways and between general education and VOTEC, intermediary exit points, the place of apprenticeship and alternance ... ? (41 - 48)

2.4 Types of certification and modes of recognition of qualifications (reflecting the interface between education and employment): unified or distinct certification for general and vocational education and for initial and continuing education, clarity and simplicity of certification systems...? (57)

2.5 Other factors, perhaps more directly perceived by different (age) groups of young people (e.g. attractiveness: getting away from "school"; closer links with "real life" through VOTEC? repulsion: stigmatisation (failure immage) of those in VOTEC? social bias: according to social origin it is "normal"/ "not normal" to participate in VOTEC? ...).

3. The interaction among different players (53, 55)

The development of VOTEC is less the result of instituional and structural arrangements within education systems than of the interaction of different players, especially the interaction between economic demand and the choices of young people and their families.

3.1 What are the main tendencies in different countries:

- will the prolongation of initial education and training continue?
- will it weaken the postition of VOTEC or might it, on the contrary, contribute to the definition of "new professionalism"?
- which implications for "pathways engineering" (VOTEc pathways and/or others)?

3.2 What is the role of other actors (apart from young people and employers in particular trade unions, political parties, government, educational institutions and teachers, information and orientation services? How can and do they affect the role and image of VOTEC in the eyes of young people?

3.3 Is "parity of esteem" between academic and vocational education possible?
- Is it possible at the post-compulsory stage?
- At the post-secondary stage?
- Is "parity of esteem" currently a problme at the post-secondary stage?
- Is it becoming one? Should/ can it be avoided ?

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4. Openness, flexibility and effectiveness of pathways

4.1 In a system of pathways which offers many cross-roads, how can the "ineffective" multiplication of switching be avoided, which is costly for individuals and society ?

4.2 How to avoid that cross-roads between general and vocational education lead to the de-valorisation of vocational education and training?

4.3 How much choice should be left to young people in initial education and training? How much guidance and structure are needed at different stages?

4.4 Where should initial education and training end and continuing, further, adult education start? Should initial and post-inital education and training be organised according to (governed by) different principles of coherence? What implications would this have for coherence between initial and post-initial education and training?

(cf. Questions for debate in DEELSA/ED/WD(94)31, Section VI).

END

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